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The Role of Agricultural Extension Officers in Developing Farmer Groups: A Case Study in Sinjai District

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ABSTRACT

This study aims to describe the role of agricultural extension officers in the development of the Pattiro Kondoe Farmer Group in Saharu Hamlet, Lamatti Riattang Village, Bulupoddo District, Sinjai Regency. Using a descriptive qualitative approach with the support of quantitative data through a Likert scale questionnaire, this study involved 18 active members of the farmer group who were purposively selected. Five main roles of extension workers were studied, including facilitator, innovator, motivator, dynamizer, and educator. The results showed that the roles of extension workers as innovators and facilitators scored the highest in the excellent category, followed by the other roles with good scores. Nevertheless, a number of barriers were found, such as limited field visits, farmers' dependence on external assistance, and low participation of certain members. These findings point to the importance of continued support for extension workers, strengthening of participatory mentoring models, and the need for more relevant agricultural technology training. This study recommends that agricultural policies in remote areas pay more attention to the sustainability of the role of extension workers in strengthening farmers' institutions independently.

Keywords: *agricultural extension workers, farmer groups, role of extension workers, institutional development, farmer participation*

INTRODUCTION

Agricultural extension in Indonesia still faces significant obstacles in encouraging farm transformation and the adoption of technological innovations. According to Samsudin, Widodo, and Achdiyat (2011), the low level of agricultural technology adoption is often influenced by the complex characteristics of innovations, lack of local relevance, and weak extension support. These conditions indicate that extension workers have not been able to effectively bridge innovations and farmers' needs. In various regions, including Sinjai District, there are still limitations in technical training, unstable group institutions, and lack of intensive assistance for farmers.

In Saharu Hamlet, Lamatti Riattang Village, Bulupoddo Sub-district, for example, local farmer groups face challenges such as weak internal coordination, limited access to information, and dependence on external assistance. These conditions have led to slow changes in farmer behavior from traditional farming systems to productivity- and efficiency-based technologies. Azra, Rosnita, and Yulida (2024) noted that the low frequency of interaction between extension workers and farmers as well as the non-involvement of group members in the decision-making process are the main causes of the weak empowerment of farmers in rural areas.

A number of studies have shown that the effectiveness of extension services is closely related to farmers' digital readiness, both in terms of literacy and supporting facilities. Fadhlurrahman, Sadono, and Fatchiya (2023)

found that low participation in online extension was due to limited understanding of technology. Similarly, Sihombing, Hubeis, and Cahyadi (2024) emphasized that facility conditions and technical assistance determine the success of digital agricultural application adoption.

To understand the dynamics of the role of extension workers, this study refers to Rogers' (2003) Diffusion of Innovations Theory, which emphasizes that successful technology adoption is influenced by farmers' perceptions of relative advantage, compatibility, complexity, trialability, and visibility of results. In addition, Pretty's (2005) community empowerment framework explains that group empowerment depends not only on the technical involvement of extension workers, but also on access to resources, active participation, and open decision-making mechanisms.

This study attempts to thoroughly evaluate the five main roles of agricultural extension officers-as facilitators, innovators, motivators, dynamists, and educators-in the development of farmer groups in the study area. Field findings show that the effectiveness of these roles varies and is highly contextualized. For example, our results show that the role of innovator is highly appreciated in the Pattiro Kondoe farmer group, in contrast to the findings in Cipelang Village, Bogor (Ergina et al., 2022), where the role of innovator was not significant. This difference reinforces the novelty of this study: a comprehensive analysis of the effectiveness of five extension roles in the local context, taking into account the supporting and inhibiting factors that play a role in the successful institutional development of farmer groups.

RESEARCH METHODS

This research uses a mixed methods approach with a qualitative descriptive design as the main approach supported by quantitative data through a Likert scale. This approach was used to describe in depth and systematically the role of agricultural extension workers in the development of the "Pattiro Kondoe" Farmer Group in Saharu Hamlet, Lamatti Riattang Village, Bulupoddo District, Sinjai Regency. This method was chosen because it allows researchers to gain a comprehensive understanding of social phenomena through a combination of qualitative narratives and numerical data that can be quantified (Creswell, 2014; Sugiyono, 2022).

The research was conducted in Saharu Hamlet, Lamatti Riattang Village, Bulupoddo Sub-district, Sinjai Regency, which was purposively selected because the farmer groups in this area are relatively active and have received continuous assistance from agricultural extension officers. This research was conducted in April-May 2025.

The sample amounted to 18 people, who were active members of the Farmer Group "Pattiro Kondoe." The sampling technique used purposive sampling, with the criteria:

(1) has been a member of the group for at least two years,
(2) actively participated in counseling at least three times in the last planting season, and
(3) have a role in the group's organizational structure (as chairperson, secretary, treasurer, or field coordinator).

Data collection was conducted through three main techniques:

- Semi-structured interviews: to explore farmers' views, perceptions, and experiences related to the role of agricultural extension agents.
- Direct observation: used to record the interaction between extension workers and farmer groups during meetings, trainings, and field extension activities.
- Closed Likert scale questionnaire: to assess the five roles of extension workers (facilitator, innovator, motivator, dynamizer, educator). Respondents were asked to rate these roles based on statements that had been prepared in the form of a 1-5 scale.

Qualitative data from interviews and observations were analyzed using thematic analysis techniques, through the stages of data reduction, data presentation, and conclusion drawing. Meanwhile, quantitative data from the Likert scale questionnaire was analyzed using the following category interval scoring technique:

Table 1. Score and Category of The Results

Score	Category
4,20 - 5,00	Excellent
3,40 - 4,19	Good
2,60 – 3,39	Fair
1,80 – 2,59	Poor
1,00 – 1,79	Very Poor

Table 1 shown the scoring results were used as a complement to the qualitative data, with the aim of providing reinforcement to the tendency of farmers' perceptions and evaluations numerically. This approach is in line with the principle of data triangulation, which combines qualitative and quantitative data to increase the validity of research results (Creswell, 2014).

RESULTS AND DISCUSSION

Main Findings and Discussion of the Role of Agricultural Extension Officers

This study identified five main roles of agricultural extension officers in the development of the Pattiro Kondoe Farmer Group: facilitator, innovator, motivator, dynamizer, and educator. Data were obtained through interviews, observations, and Likert scale questionnaires, then processed using interval scoring to determine the effectiveness of each role. The following visualization shows the average score of each role:

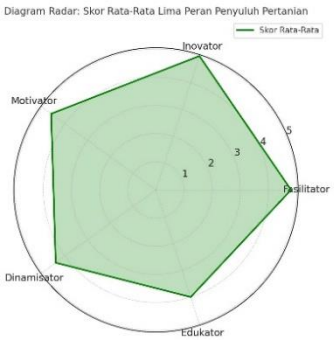

Figure 1. Radar Diagram of Average Score of Five Roles of Agricultural Extension Workers

Based on Figure 1, the highest level of effectiveness in the technical role (innovator-facilitator) reflects the pattern of farmer response to output-based extension, as also observed in the studies of Hervavi et al. (2024) and Fadhlurrahman et al.

Facilitator

Average score: 4.80 (very good category).

Extension workers are considered active in facilitating group meetings, assisting with administrative arrangements, and providing access to agricultural information.

Narrative quote:

"During farmer group meetings, extension workers usually help prepare invitations and sometimes also bring tools such as banners or brochures." - Mr. Arsyad, Head of Farmer Group

The role of the facilitator is important to drive group dynamics. This is in line with the empowerment framework according to Pretty (2005), which emphasizes the importance of facilitation so that groups are able to make decisions collectively. The effectiveness of this role is also supported by logistical support and personal relationships between extension workers and group leaders.

Innovators

Average score: 5.00 (excellent category).

Extension workers successfully introduced technologies such as water pumps, tractors, and improved seeds.

Narrative quote:

"We farmers can see the results directly, for example, the rice demonstration plots assisted by the extension workers have better results." - Respondent 6

This high score contradicts the findings of Ergina et al. (2022) in Bogor who stated that the role of innovators was not significant to group development. This difference can be explained by the support of the local government of Sinjai, direct involvement of farmers in demonstration plots, and the type of technology that is easy to apply. Based on Rogers' Innovation Diffusion Theory (2003), this success is influenced by relative advantage and ease of adoption.

Motivators

Average score: 4.60 (good category).

Extension agents motivate farmers through providing farming inputs and field visits.
Narrative quote:
"The extension workers have great enthusiasm, but sometimes farmers are lazy to participate in activities because there is no transport money." - Respondent 9

The supporting factor for this role is the direct incentives or assistance received by the group. In contrast, the main obstacle is the resistance to participation of farmers who expect incentives. This reflects a dependence on external incentives, which Pretty (2005) argues can hinder group independence.

Dynamizers

Average score: 4.40 (good category).
The extension worker helped establish the organizational structure and reactivated the role of the board.
Narrative quote:
"The old treasurer had moved away, but the extension worker helped to select a new treasurer to keep the group running." - Arsyad

This role is important in maintaining the sustainability of the farmer group. The extension worker as a dynamizer plays a role in maintaining institutional stability. This supports Creswell's (2014) opinion that the success of group-based programs depends on internal and external dynamics consolidated by field facilitators.

Educator

Average score: 4.00 (good category).
Extension workers provide technical training and facilitate group learning, although the intensity is not regular.
Narrative quote:
"There was once training from Kupang on cattle fattening, but it was only once and not all members participated." - Respondent 13

The relatively lower score is due to the low frequency of training and limited range of participants. The role of educators in Rogers' theory belongs to the knowledge and persuasion stage, which requires a sustained approach for farmers to truly understand and apply the technology. This is particularly challenging in the context of areas with difficult topography and limited access.

Barriers in implementing the role of educator are also related to the intergenerational literacy gap in the farmer group. Hervavi et al. (2024) emphasize that extension is often ineffective among older farmers due to limited understanding of new technologies introduced online and in print. In addition, extension workers also face internal challenges in the form of limited information literacy skills, as described by Nuryadi, Saleh and Salampesi (2023).

Tabel 2. The following table summarizes the scoring results and field findings for each role.

Extension roles	Assessment indicators	Average score	Category	Brief description
Facilitator	Meeting facilities, administrative assistance, access to information	4,80	Excellent	Extension agents actively coordinate with groups and assist with paperwork
Innovator	Demonstration plots, new technology, improved seeds	5,00	Excellent	Farmers respond positively to innovations introduced
Motivator	Visits, business advice, capital support	4,60	Good	Extension agents encourage enthusiasm even though they still depend on incentives
Dynamizer	Inter-group cooperation, re-organization, consolidation of activities	4,40	Good	help regenerate and strengthen group structures
Educator	Training, farming techniques, pest control	4,00	Good	Training is sometimes not held and participants are limited

After analyzing the five main roles of agricultural extension workers (shown in Table 2), it can be seen that roles that are technical in nature and directly benefit farmers-such as innovator and facilitator-get the highest

scores. This indicates that farmers are more responsive to extension workers who provide practical and applicable solutions, such as the procurement of agricultural tools and technology, and group administrative assistance. This finding is in line with the results of Samsudin, Widodo, and Achdiyat's (2011) research, which states that the success of technology adoption is highly dependent on extension workers who are able to simplify the technology and adapt it to the needs of farmers at the local level.

In contrast, the role of educator, which should be the foundation in improving farmers' capacity in a sustainable manner, received the lowest score. This shows that extension has not fully succeeded in encouraging long-term learning processes. As emphasized by Pretty (2005), farmer empowerment depends not only on access to agricultural inputs, but also on farmers' ability to understand, manage and make decisions independently.

The inequality of effectiveness between these roles reflects that the dominant extension model is still top-down and project-oriented, not institutionally based. According to Azra, Rosnita, and Yulida (2024), extension services that are only conducted when there is government assistance or programs tend to weaken the independence of farmer groups and form dependence on external incentives.

The implication of this pattern is the need to restructure the extension approach through the training of extension workers who emphasize the role of educators and dynamists in a more balanced manner. Extension workers need to be equipped with pedagogical and social competencies to facilitate participatory group learning. In addition, institutional strengthening of farmer groups should also be directed at increasing the active participation of members and strengthening the group's function as a vehicle for joint learning, not just a recipient of assistance.

Supporting Factors and Barriers to the Effectiveness of Agricultural Extension Roles

The effectiveness of the role of agricultural extension officers in developing farmer groups is not only determined by the competence of individual extension officers, but also influenced by various external and internal factors. Based on the results of interviews, field observations, and scoring data, several supporting factors and main obstacles that affect the success of extension in the Pattiro Kondoe Farmer Group were found.

Supporting Factors

Local Government Program Support

The local government through the Agriculture Office actively provides support in the form of superior seeds, agricultural machinery (tractors, water pumps), and technical training. The availability of these facilities strengthens the role of extension workers as innovators and facilitators.

"Usually the extension workers come with assistance or tools, we welcome it because it can be used immediately." - Respondent 2

The literature supports that the presence of physical inputs (facilities and infrastructure) strengthens the effectiveness of extension (Effendy & Tirtosudarmo, 2020).

Harmonious Social Relationships between Extension Officers and Group Managers

Informal interactions between extension officers and group leaders create open communication and speed up coordination. It also strengthens the legitimacy of the extension worker in the eyes of group members. "Mr. Halim usually comes and chats casually, if there is a problem we immediately convey it." – Arsyad

Active and Experienced Management

The group chairperson, secretary and treasurer are respected local community leaders. Their average membership period is more than 5 years, so they have an understanding of assistance procedures, reporting, and collective activities. According to Pretty (2005), the success of group-based empowerment depends heavily on the internal dynamics managed by the core committee.

Obstacle Factors

Limited Frequency of Extension Visits

Extension workers are not always present regularly because they have to handle more than one fostered area. Distance and terrain that are difficult to access are the main obstacles. "The extension workers only show up again if there is a program from the agency, so we just wait, they rarely come if there are no activities." - Respondent 7. This geographical barrier was also noted in a study by Nurwahidah et al. (2024), which showed that remote locations lead to suboptimal outreach by extension workers.

Dependence on Project Assistance

Some group members tend to be active only when there is material assistance. Group activities become passive when there is no incentive. This shows that the motivation for participation is still external.

"If there is no assistance or money for consumption, sometimes members are lazy to participate in meetings." -

Respondent 11

This indicates low self-mobilization, as criticized by Pretty (2005), who states that pseudo participation only lasts if there is a direct reward. This approach often neglects education and sustainability aspects. Ernah and Wulandari (2023) show that while digital socialization can improve farmers' knowledge, its effectiveness depends on sustainability, participatory methods and institutional support.

Technology Literacy Gap

Although extension agents introduce new technologies, not all members understand their optimal use. Some farmers are more comfortable with conventional methods. This is consistent with Rogers' (2003) theory, which states that complexity can slow down adoption.

Unequal Participation among Members

Activities such as training or meetings are often only attended by administrators or senior members. Younger members and women tend to be less involved. Research by Dewi et al. (2023) also shows that extension effectiveness is higher in groups with equitable participation than those that only rely on internal elites.

CONCLUSION

This research shows that agricultural extension officers have an important role in the development of the Pattiro Kondoe Farmer Group in Saharu Hamlet, Lamatti Riattang Village, Bulupoddo District, Sinjai Regency. Through a mixed methods approach, the five roles of extension workers were analyzed in depth, namely as facilitators, innovators, motivators, dynamists, and educators. The scoring results showed that the role of innovator received the highest score (5.00), followed by facilitator (4.80), motivator (4.60), dynamator (4.40), and educator (4.00). These roles were rated as good to very good by group members, mainly due to the contribution of extension workers in introducing technology, assisting groups, and providing assistance. However, there were also some challenges, such as limited field visits, reliance on.

Based on the research results, several concrete steps are suggested for policy makers: (1) Increase technical training for extension workers, especially in the application of specific agricultural technology according to local needs, so that the innovations introduced are easily accepted by farmers; (2) Provide sustainable funding for extension activities, including operational budgets and transportation of extension workers to remote areas for more consistent assistance; (3) Implement a participatory mentoring model, involving farmer group administrators as active partners in facilitation, so that group independence can be built gradually; and (4) Mainstream vulnerable groups such as young farmers and women through involvement in training, group decision-making, and management roles.

It is important to integrate this recommendation into agricultural development planning at the village and district levels (such as in the Musrenbang forum and RDKK preparation), involving cross-sectoral cooperation between extension workers, village governments, and community assistance institutions.

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